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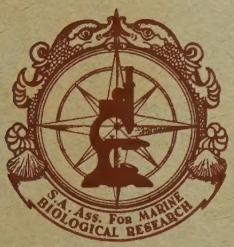

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Investigational Report No. 3

SHARK ATTACK OFF THE EAST COAST OF SOUTH AFRICA, 6 JANUARY 1961.

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D. H. Davies and J. D. D'Aubrey

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SHARK ATTACK OFF THE EAST COAST OF SOUTH AFRICA, 6 JANUARY 1961

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D. H. Davies and J. D. D'Aubrey

Following a fatal shark attack on an African male, Petrus Sithole, at Margate in December 1960, Davies and D'Aubrey (1961) an attack took place at Winkelspruit, a small town on the Natal South Coast 22 miles from Durban. This is the second shark attack to occur in the area within a period of two weeks.

A general account of the attack, rescue, extent of injuries and subsequent investigations with reference to the species responsible for the attack is given as follows:

Particulars of Victim

The victim, Michael Land, is a Rhodesian of European descent aged 13 years who was on vacation from Rhodesia. His height was 4 ft. 10 ins. and he was wearing light green swimming trunks and a thin silver chain with a St. Christopher badge around his neck. His skin was light-coloured.

Locality of Attack and Accompanying Conditions

Michael and five young friends were in slightly murky water approximately 3 feet deep, an estimated 50 feet from the shore. His position at the time of the attack is marked by a cross in the diagram (see *Fig. 1*). The attack took place at 7.35 p.m. on January 6, 1961. It was after sunset and the light was poor. The temperature of the water was approximately 24°C and it was $1\frac{1}{2}$ hours after high tide.

Description of the Attack

The victim was standing in water about 3 feet deep next to submerged rocks (see *Fig. 1*) and on the edge of the channel, when he experienced an itching sensation on his right foot. He leaned forward to investigate his foot with his right hand and was severely bitten across the hand. He screamed at this moment and remembers nothing further until he was carried on to the beach.

Michael had been swimming with five other young boys on the inner sandbank. According to eye-witnesses the victim screamed and was seen to flail the water with his arms and appeared to be "struggling with something" at the same time. He then

turned towards the beach and fell forward into the water on his face.

The victim's screams attracted the attention of two lifesavers on duty. One ran into the water, grasped the victim and started running towards the beach, a distance of 15-20 yards. He fell twice and on each occasion looked around to see the shark following at a distance of about 6 feet. The second time he fell was about halfway between the channel and the beach. At this point he was joined by the second lifesaver and between them they carried the victim to the lifesavers' clubhouse. The shark was not seen again.

The lifesavers took the boy into the clubhouse and followed the procedure laid down for the treatment of victims of shark attack prepared by a medical Research Associate of the Oceanographic Research Institute and applied a tourniquet to the right leg. The victim's condition was considered good by the doctor at the time of his arrival on the beach. The victim was then transferred to the Addington Hospital, Durban, by ambulance. On arrival he was given blood transfusions and was ready for operation by 9 p.m. His theatre treatment included general stitching of the wounds on the right leg and hand and amputation of the leg below the knee.

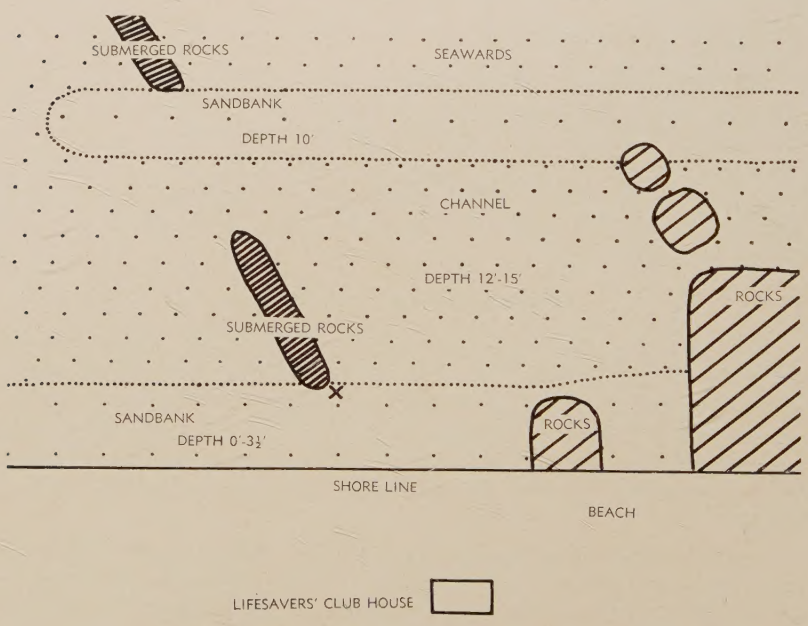

Fig. 1. Diagram showing position of attack

Description of the Wounds

The right foot was badly bitten and the leg was bitten through just above the ankle (see *Fig. 2*). The right leg was left with a complete but exposed tibia which had become disarticulated at the ankle and a fibula which had been snapped by the force of the attack (see *Fig. 2*). The skin edges of the major wound resulting in the loss of the foot were clean-cut and not serrated. In the region of the knee there were severe lacerations, mainly at the back of the knee. These suggested a partially unsuccessful bite with the leg slipping from the grip of the shark's mouth causing extensive tearing. Below the knee on the outside of the leg were three tooth marks, the shape and pattern of which strongly suggested the teeth of a *Carcharinid*. Behind the thigh and on the inside of the leg were more skin wounds caused by teeth which also had a torn appearance. Below the right buttock were two flattened tooth marks on the skin. A severe bite on the victim's right hand caused extensive damage and severing of the tendons.

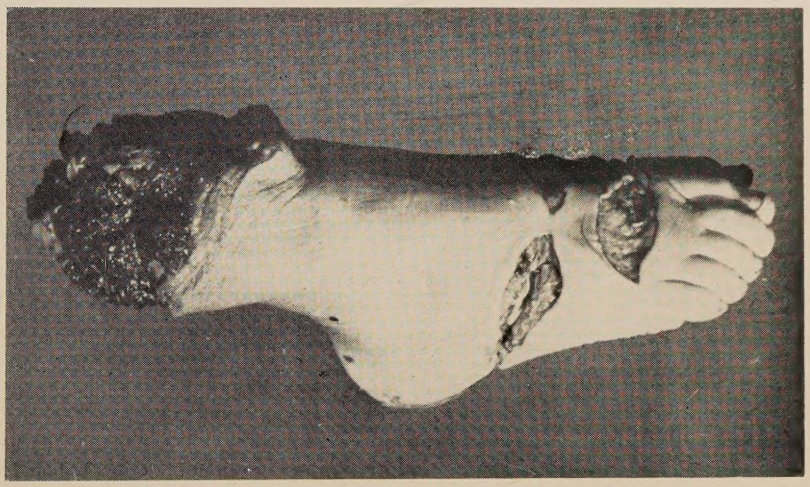

Fig. 2. Victim's foot showing clean-cut edges of wounds.

Study of Wounds

Careful examination and extensive X-ray photographs of the wounds did not reveal the presence of any teeth or tooth fragments from the shark's mouth.

From the account given by the victim and the witnesses, together with a detailed examination of the wounds it is evident that a number of bites were made during the course of the attack. The first bite was almost certainly made on the foot and the second

on the victim's right hand. Then the shark may have moved up to the region of the victim's thigh where it made a series of "tentative" bites causing only minor skin wounds as far as the knee. At the knee a far more serious bite was made causing extensive tearing of the skin and partial dislocation of the knee joint. The most serious bite was made in the region of the lower leg above the ankle. It resulted in the leg being completely severed doubtless causing the victim to topple forward during his attempts to escape from the shark.

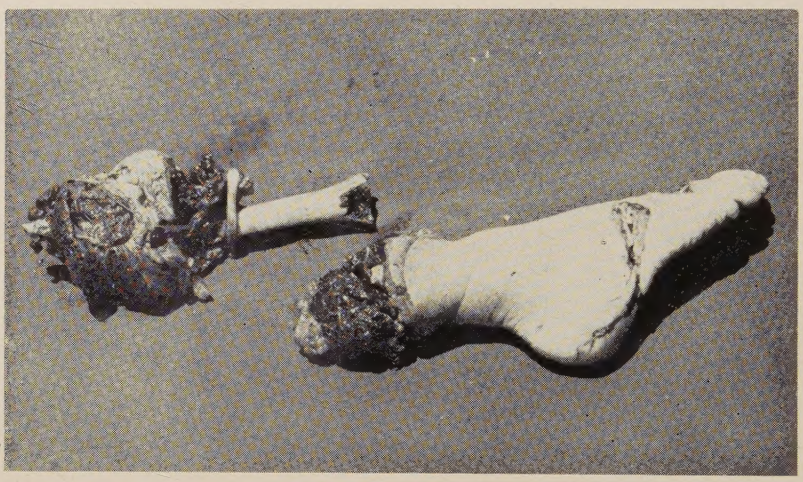

FIG. 3 Foot and lower end of leg.

IDENTITY OF SPECIES RESPONSIBLE FOR THE ATTACK

Due to lack of conclusive evidence such as the presence of a tooth fragment in the wounds or characteristic bone lesions caused by teeth, the identity of the attacking shark in the case of Michael Land cannot be made with certainty. There is considered to be sufficient evidence, however, for a partial identification of the attacking species to be made.

The skin edges of the main wound were clean-cut and characteristic of the bite of the grey sharks (*Carcharinus* spp.) rather than the ragged-toothed sharks (*Carcharias* spp.); other groups such as the *Isuridae* and *Sphyrnidae* have been excluded on the basis of the extreme unlikelihood of these species occurring in such shallow inshore waters. The individual tooth marks on the leg were flattened laterally, i.e. slit-like cuts, again suggesting the tooth marks of a grey shark rather than the stiletto-like punctures of the ragged-toothed sharks. No indication of the complete

size of the sweep of the jaws is apparent on the victim's wounds but some indication is given on the foot (see *Fig. 2*) and the hand. The lifesaver's estimate of a total length of 7 feet for the shark is probably close to the correct figure.

Conclusion

It can be stated therefore on the basis of the available evidence that the shark responsible for the attack on Michael Land was in all probability a Grey Shark *Carcharinus* sp. in the neighbourhood of 7 feet in total length.

It is of interest to record that extensive, heavy rains had caused flooding of the rivers producing widespread discolouration along the entire length of the Natal coast due to the presence of large quantities of silt in suspension. This, together with the high water temperatures at this time of the year, may have some bearing on the increased incidence of shark attack in the area.

The conformation of the beach on which the attack on Michael Land took place closely resembles that on which Sithole was attacked at Margate. In both areas there was an inshore shallow area consisting of a sandbank bordered on the seaward side by a relatively deep channel with an additional sandbank beyond. This conformation is to a large extent typical of the Natal South Coast area. It is doubtful whether large sharks would cross long stretches of shallow turbulent water but it is more than likely they would venture short distances into shallow areas from deep water.

In a gently sloping beach the presence of a deep (10 feet) channel close inshore is considered to be of great significance in the incidence of shark attack in such shallow water since the channel provides an easy approach for large sharks to the shallow areas.

Acknowledgments

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